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ACTIVITIES OF THE UNITED NATIONS SYSTEM: ASSESSMENT OF THE EFFECT OF ACTIVITIES OF THE UNITED NATIONS SYSTEM RELATED TO THE PROCESS OF CREATING AND STRENGTHENING ENDOGENOUS CAPACITY-BUILDING IN SCIENCE AND TECHNOLOGY IN DEVELOPING COUNTRIES

Assessment of the effect of activities of the United Nations system related to the process of creating and strengthening endogenous capacity-building in science and technology in developing countries

Report of the Secretary-General

SUMMARY

A major issue in the global economic agenda of the 1990s is ensuring that investment resources are well targeted, coordinated and optimized to yield maximum results. With more claimants than ever before and overall stagnant global investment funds, aid impact and aid coordination have become central concerns.

Recent years have witnessed the renewed directing of attention to the issue of national capacity-building, partly as a reflection of the perception that earlier international policies and efforts did not sufficiently emphasize that issue. The operational activities of the United Nations system, largely as a follow-up to General Assembly resolution 44/211 of 22 December 1989, are attaching considerable importance to the issue, including the modality of national execution. The United Nations Development Programme (UNDP) has launched Capacity 21, a plan of action to assist developing countries in formulating economic, social and environmental programmes and policies on

* E/CN.16/1993/1.

sustainable development, with the aim of strengthening national capacities to integrate and harmonize environment and development and to formulate national capacity-building strategies for implementing Agenda 21. 1/ This programme is supported by a sustainable development network (a UNDP initiative launched in 1990), to make relevant information on sustainable development readily available to developing countries. Many other institutions have also embarked on similar programmes in this area.

In short, the international community and the United Nations system have advanced capacity-building to the forefront of the global agenda, and within their respective mandates individual organizations are attempting to address this crucial dimension of development.

A long-standing concern relates to the means for improving the quality and effectiveness of science and technology activities within the United Nations system. The quantum of resources for science and technology channelled through the United Nations system is difficult to assess, given the different interpretations of what constitutes science and technology, and the nature of activities to be included.

Within the broad scope of science and technology, the activities that can be construed as contributing to endogenous capacity-building are difficult to define. Based on the concept of endogenous capacity-building in science and technology, the following is being sought: to create and strengthen domestic capacities to make the right technological choices in the design and implementation of economic activities, to integrate technological development with macroeconomic management and to put in place the optimum mix of policies and programmes for imparting momentum to this long-term process. As a means of translating that concept into specific action, a pilot programme in 10 developing countries supported through external budgetary resources has been launched and is at various stages of implementation.

An integral part of the pilot programme is an assessment of the impact of the activities of the United Nations system on endogenous capacity-building in a given country. The present report summarizes the conclusions that could be drawn from the assessments made in four countries. A more definitive assessment will be possible in the next six months, following the completion of the pilot projects in six more countries.

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INTRODUCTION

1. The former Intergovernmental Committee on Science and Technology for Development (the predecessor of the Commission on Science and Technology for Development), in its resolution 1 (XI) 2/ adopted on 3 May 1991 at its eleventh session, requested the Secretary-General, in cooperation with the organs, organizations and bodies of the United Nations system, to submit to the Committee, at its next session, an analytical report on how the United Nations system could more actively enhance the impact of its activities related to the process of creating and strengthening endogenous capacity-building in science and technology in developing countries.

2. The General Assembly, in its resolution 46/165 of 19 December 1991, requested the Secretary-General, taking into account the outcome of the United Nations Conference on Environment and Development and on the basis of the discussion by the Intergovernmental Committee on Science and Technology for Development of the substantive theme at its twelfth session, to submit to the General Assembly at its forty-eighth session a comprehensive, analytical report on ways and means of strengthening endogenous capacity-building in science and technology in the developing countries.

3. In its resolution 47/199 of 22 December 1992, the General Assembly requested the Economic and Social Council, through the Commission on Science and Technology for Development at its session in 1993, to consider the note by the Secretary-General (A/47/419/Add.1) on the comprehensive policy review of operational activities of the United Nations system, and to make appropriate recommendations thereon. That note, which examined the contribution of the operational activities of the United Nations system to national capacity-building in science and technology, is submitted to the Commission at its first session as a companion document to the present report.

I. OVERVIEW

4. That development, to be enduring and sustainable, must build on the foundation of human and institutional domestic capabilities to make the right choices, to choose the right priorities and to harness the full potential of local skills, knowledge and resources has emerged as a key concept in the late 1980s, and is now poised at the cutting edge of global change and economic strategic thinking in the 1990s. Capacity 21, a programme launched by the United Nations Development Programme (UNDP) and designed to integrate environment and development and to formulate national capacity-building for Agenda 21, 1/ is an outstanding example of this new thinking and sharpened global consciousness.

5. In no other area, however, is the concept of endogenous capacity-building more relevant and crucial than in that of science and technology. Modern technology, called almost magical, is the essential means through which national comparative advantage (which every country possesses in some form or other) can be transformed into international competitive advantage. Such a transformation cannot take place exclusively through access to external technologies and

injected across the board into economic and industrial activities. More important, effective adaptation and absorption of exogenous technologies cannot be induced without endogenous capacity to decide what to develop domestically, what and how to import, how to diffuse and assimilate and, above all, how to integrate management of technological change into economic policy-making. Clearly, endogenous capacity-building in science and technology is a concept whose time has come, but it is still difficult to operationalize this concept in the country context.

6. The United Nations, primarily the former Centre for Science and Technology for Development and the Department of Economic and Social Development of the United Nations Secretariat, have been grappling with this challenge for over six years. The Centre instituted and backstopped substantive consideration of this theme by the Administrative Committee on Coordination (ACC) Task Force on Science and Technology for Development, by the former Advisory Committee on Science and Technology for Development and by the former Intergovernmental Committee on Science and Technology for Development. Many of the ideas that have now gained respectability and relevance - the programme approach, national execution, participatory priority setting, consensus-building, reliance on local expertise, synergy between domestic and aid resources - have not only been incorporated into the concept but are actually being implemented in a pilot programme in several developing countries. In this sense, the initiative in science and technology is a forerunner of Capacity 21 and other programmes such as the African Capacity Building Foundation of the World Bank. The pilot programme on endogenous capacity-building in science and technology has been widely appreciated and endorsed in broad terms by the Organisation for Economic Cooperation and Development (OECD). It was also reviewed at a meeting of a group of donor agencies that included the International Development Research Centre and the Swedish Agency for Research Cooperation with Developing Countries (SAREC). Although pilot in nature, the programme covers a wide spectrum of countries and the empirical data gathered and the analyses made could provide a conceptual and operational basis, with appropriate adjustments, to other countries and to bilateral donor agencies. The nature and extent of the involvement of the United Nations in those countries need not be as direct and impulsive as in the current programme.

7. The endogenous capacity-building programme in science and technology is an innovative and valuable experiment in the development domain. If successful (and early indications and independent mid-term evaluation results are both encouraging and promising), it could provide useful input into revamping United Nations system operational activities and technical cooperation.

8. An important component of this programme is its review of the impact of external aid, particularly that of the United Nations system as a whole, on endogenous capacity-building, for the purpose of introducing necessary changes in the design, direction and delivery of future projects.

9. A basic study, covering broad assessment and in-depth review of selected case-studies, and an inter-agency mission to the concerned countries, are the means through which this objective is being pursued. Details on the countries visited, the assessments made and the conclusions drawn can be found in the main report. Assessments have been conducted in four countries and six more are scheduled to take place in the autumn of 1993 as an integral input into the

endogenous capacity-building process, thereby paving the way to a more definitive across-the-board assessment of the impact of the activities of the United Nations system.

10. Although the scope of the programme is limited relative to the developing world, it provides a point of reference for making a broader impact assessment of external (especially United Nations system) assistance in science and technology. At a time when many countries are wrestling with other immediate and important problems, involving short- and long-term needs, sustenance and sustainable development and overall stagnant resources for investment, the importance of achieving maximum impact from external aid, especially from multilateral sources, cannot be overemphasized. This is reflected in General Assembly resolution 46/165 on science and technology for development. The subject of science and technology was also considered by the General Assembly in the context of the triennial policy review of the operational activities of the United Nations development system, with the Assembly having requested, in its resolution 47/199, that the Economic and Social Council, through the Commission of Science and Technology for Development at its session in 1993, consider the report by the Secretary-General on the comprehensive policy review of operational activities of the United Nations system as a means to examine the contribution of those activities to the enhancement of the national capacities of developing countries in the field of science and technology. Increased attention to science and technology is also exemplified by the pervasive presence of science and technology issues in Agenda 21, the principal outcome of the Earth Summit and whose implementation is a major challenge to national policy-making bodies and multilateral agencies. As a result, the concept of endogenous capacity-building in science and technology needs to be deepened to include coverage, to a greater degree than before, environmental impact and future assessments.

II. ENDOGENOUS CAPACITY-BUILDING IN SCIENCE AND TECHNOLOGY

11. The United Nations Conference on Science and Technology for Development, 3/ held in 1979 in Vienna, addressed three major issues in science and technology for development, the most fundamental of which was endogenous capacity-building. It had been defined as the extent of local capability to exercise independent, informed judgement and actions regarding the generation, acquisition and development of technologies for economic and social development, including the fulfilment of basic human needs within a society.

12. It should be noted that the concept of endogenous capacity-building in science and technology is not synonymous with indigenous science and/or technology nor is it wholly subsumed under science and technology infrastructure such as research and development institutions. It includes human resource development and the integration of science and technology into macroeconomic policies and is fully in harmony with sustainable development. In its essence, it is the crucial capacity - human and institutional - to decide what science and what technology should be developed domestically, how to obtain access to and negotiate the importation of foreign technologies, and how to harmonize technological change and the growth process, all in the context of long-term development goals and natural comparative advantage. Many developing countries have, at considerable cost, established scientific and technological research

and development institutions, universities, and consultancy organizations, and design and engineering organizations, and have a pool - meagre or large - of scientists and engineers. Many have also formulated, with varying degrees of specificity and success, science and/or technology policies; but in most cases they have remained isolated from overall development and their technological dependency has remained fixed or, at best, has diminished marginally. As aptly stated in a recent OECD report, 4/ "what increasingly defines the less-advanced developing countries is the weakness or even complete absence of a capacity to manage technological change", as a result of which they are confronted with "grave risks of falling further behind more advanced developing countries in their ability to compete in world markets while raising their income levels". The report also states that "it is not building up science and technology per se that is the core issue. What really matters is strengthening - across the whole of society - the capacity to manage technology change ... Against this background, strengthening the national capacity of less-advanced developing countries to manage technological change should be regarded as a critical and urgent development issue for the 1990s."

13. In short, what is being emphasized in the previous paragraph is endogenous scientific and technological capacity, as already described. The important point is that both domestic research, and the obtaining of access to foreign technology on reasonable terms and its assimilation into the economic process, require home-grown capacities to choose, apply and adapt. In reality, domestic research and access to foreign technology constitute two sides of the same coin. Endogenous capacity is crucial for solving pressing development problems such as poverty alleviation and accelerated growth, and for redressing economic and technological dynamics.

14. As complex and crucial as the concept is, it is even more daunting to operationalize and apply it in the sociocultural context of an individual country.

15. The end-of-decade review of the implementation of the Vienna Programme of Action on Science and Technology for Development 5/ emphasized endogenous capacity-building of developing countries in science and technology for development at the country level.

A. Pilot projects

16. Starting in 1986, a series of pilot projects were undertaken in 10 developing countries, at their request, to assist them (in their efforts to accelerate economic growth) in establishing a package of policies and programmes designed to harness the immense potential of modern science-based technologies. The first four countries to participate in those projects were Thailand, Jordan, Nepal and the United Republic of Tanzania, followed by another six developing countries (Cape Verde, Jamaica, Pakistan, Togo, Uganda and Viet Nam) under an interregional project.

17. The primary objective of the programme is to enhance the intrinsic capability of those countries to exercise autonomous and informed judgements on how and where to develop and deploy domestic or external technologies in the fulfilment of their demand-driven developmental priorities. This approach is

consistent with the argument, set forth in paragraph 25 of the note by the Secretary-General (A/47/419/Add.1) on the comprehensive policy review of operational activities of the United Nations system that substantive contributions to endogenous capacity-building by United Nations organizations needed to be made in the context of specific countries or small groups of related countries.

18. The pilot programme, in short, aims to assist interested countries to identify and overcome policy inconsistencies and programmatic gaps in their efforts to harness technology to the service of development.

19. It should be noted that the pilot programme differs significantly from traditional science and technology projects undertaken in developing countries by both bilateral and multilateral agencies. First, it addresses technological dependency from the perspective of macroeconomic management. Second, it develops a people-oriented participatory approach by bringing in a broad range of developmental constituencies and interests that are traditionally left out of prioritizing with respect to science and technology in a country. Third, it places equal emphasis on the process of arriving at a national consensus on prioritization and on the resultant output. Finally, it is demand- and country-driven, thereby reflecting more accurately the country's perceptions and priorities. In short, this programme seeks to strike a balance among policy issues, processes and output, with each element important in its own right, but together constituting a new paradigm.

20. Specifically, this programme aims to achieve the following objectives:

(a) To institute domestic decision-making processes that give due weight to the technological dimension in relation to socio-economic and ecological parameters;

(b) To review and establish organic linkages within the science and technology system and especially among research and development institutes, science and technology information, national research development corporations, and consultancy and design organizations, thereby optimizing human and natural resources in the achievement of clearly defined developmental objectives;

(c) To review economic policies in relation to their impact on endogenous technological development and to integrate scientific and technological activities with fiscal, trade, investment and other macroeconomic policies that are designed to ensure consistency and complementarity;

(d) To build a broad national consensus among the stakeholders in the development process on how and where technologies, domestic or imported, should be targeted so as to make a developmental difference; such a consensus is translated into a portfolio of prioritized policy adjustments and programmes critical to capacity-building;

(e) To assemble a coalition of resources for science and technology drawn from domestic, bilateral and multilateral sources to implement the above-mentioned portfolio.

21. The methodology adopted to achieve the above objectives involves the following:

(a) A preparatory mission from the United Nations to study the country context and to design the specific implementation plan;

(b) Setting up of an organizational structure, including the engagement of a National Project Coordinator and the establishment of a National Steering Committee, usually headed by a high-level government official or prominent personality in the country;

(c) Preparation of diagnostic studies on national technology-sensitive development priorities and needs, and on comparative advantages and constraints of the national science and technology system, as well as on the impact of macroeconomic policies on endogenous capacity-building;

(d) Assessment of the impact of external technology aid projects on endogenous capacity-building through national studies and inter-agency missions;

(e) Organization of a series of national policy dialogues among different stakeholders in the development process leading to the development of a portfolio of priority initiatives, including policies, programmes and projects that provide an organic framework for endogenous capacity-building;

(f) Organization of round-table meetings with the donor community, both bilateral and multilateral, together with the domestic financing institutions, to develop a coalition of resources for the portfolio of initiatives.

22. Appropriate variations have been achieved in each of the six countries for the purpose of taking into account specific situations. Each country participating in the pilot project has set up a National Steering Committee with representatives from the Government, the parliament, industries, academic institutions, the research and development community, the private sector and other interest groups in the country. These are the delegates of the different constituencies and stakeholders in the development process. A National Project Coordinator has also been recruited in each country to organize studies, meetings and dialogues and to serve as the secretary to the National Steering Committee.

23. The first set of substantive studies focused on issues such as the role of science and technology in socio-economic development, the critical review of the legislative framework for science and technology development, inventory of the infrastructure in science and technology and the critical assessment of its utilization for development, the impact of multilateral and bilateral assistance on endogenous capacity-building, and the impact of microeconomic policies on endogenous capacity-building in science and technology.

24. The first policy dialogues in these countries were held in the latter half of 1992. The first dialogues identified issues and recommended further studies with a more sharply focused perspective. The second policy dialogues will be completed by the first half of 1993 (except in Jamaica, which held the second dialogue in December 1992), and the third policy dialogues will be organized in the third quarter of 1993.

B. Inter-agency missions

25. Following the second policy dialogues, when priority issues have been clearly identified and proposals for initiatives have been adequately deliberated by the stakeholders, inter-agency missions composed of representatives of interested agencies of the United Nations system will visit the countries. The impact study on the contribution of external aid to endogenous capacity-building will serve as the basis for the missions. The objective of the missions is to enable representatives of agencies with ongoing or planned activities in science and technology to interact with different constituencies so as to ascertain both their views on how external aid, particularly from the United Nations system, could be made more useful to endogenous capacity-building in science and technology and what changes might be necessary in future activities.

26. Specifically, the inter-agency missions are expected to coordinate the science and technology programmes and projects undertaken by the various agencies of the United Nations system and to review:

(a) The degree to which external support has helped to develop human resources capability to make decisions autonomously as measured with respect to such elements as equipment, fellowships for training nationals, and other training components;

(b) The degree to which outside support fills the gap in the capacity of the institutional framework for science and technology;

(c) The nature and duration of external expert support in the execution of the programme;

(d) The extent to which external support has sensitized national decision makers to the need for strengthening endogenous science and technology capacity through, for example, a commitment of resources;

(e) The use of national endowments such as national resources, consultants and expertise in the execution of projects;

(f) The degree to which activities supported by external sources have continued to be supported through national resources, since the cessation of external support;

(g) System-wide science and technology activities in the countries concerned and the scope for further streamlining and harmonization.

27. The inter-agency missions will also enable the countries concerned to communicate collectively with representatives of the United Nations system and agree on measures to be taken by both the country and the United Nations system in the future. The missions will also interact with bilateral donors so that the overall limited external resources can be channelled to national priority areas. This represents one of the few occasions where the system will act coherently as a catalyst at the country level, and not advocate individual agency interests; and concerned countries have found the approach a welcome relief. The findings and recommendations of the missions will be made available

to the countries concerned and used by the ACC Task Force on Science and Technology for Development and by the United Nations system to make necessary changes, if need be, in the design, context and execution of future activities.

C. Evaluation of pilot projects in participating countries

28. Endogenous capacity, in terms of the making of appropriate decisions in science and technology, cannot be assessed directly. However, it can be examined with regard to performance in the various areas of a country's science and technology structure, policies and programmes.

29. Participating countries differ widely in their social, economic, political and cultural characteristics. Effective evaluation must reflect these factors. Although only a few elements are quantifiable, what finally counts is the impact of the approach on policy and planning, on the nature of the decision-making process, and on human and institutional development. One must assess the effect of the project in initiating and sustaining a process of endogenous capacity-building in science and technology in each country. The ultimate indicator is what happens after United Nations activity is terminated and how far processes, especially policy dialogues, are institutionalized and continued. At this stage, a mid-point evaluation has been initiated that focuses on the following elements:

(a) Establishment of an institutionalized participatory policy-making process in science and technology;

(b) Better coordination in political, economic and social policy frameworks with regard to their impact on science and technology for development;

(c) Enlargement of the national consensus on the priority needs for research and development in the country;

(d) National consensus on the allocation of resources, both internal and external, for the initiatives generated through the policy dialogues as a means to respond to priority development needs;

(e) The quality of the portfolio of initiatives for domestic and external financing, and the degree of success in finding financial resources for it.

30. Two independent evaluators have visited the participating countries to evaluate the work done so far, so that the concerned countries can make assessments and adjustments during the remainder of the project. A review meeting of the Chairmen of the National Steering Committees and the National Project Coordinators was scheduled to be held in Berlin prior to the first session of the Commission. It will take stock of the programme in its entirety in the six countries, using the reports of the evaluators. Representatives of the donor country (Germany) will also be invited to participate.

III. OPERATIONAL ACTIVITIES AND IMPACT ASSESSMENT

31. The United Nations system operates at many levels, and in a diverse range of activities. It is important to note that each organization within the United Nations system also has its own mandate and priorities, and that many organizations have their own governing bodies. Thus, coordination with regard to capacity-building in science and technology at the country level is not always easy. Furthermore, before meaningful coordination can take place, it is necessary to assess the overall impact of the activities of the United Nations system on endogenous capacity-building. The former Intergovernmental Committee on Science and Technology for Development, in its resolution 2 (X), 6/ decided, inter alia, to include an item entitled "Assessment of the impact of the activities of the United Nations system in promoting endogenous capacity-building in developing countries in the field of science and technology" in the agenda of its eleventh session. In response to a request of the Committee set forth in the same resolution, the former Centre for Science and Technology for Development prepared a report (A/CN.11/1991/4) under that item that was submitted to the Committee at its eleventh session. A note by the Secretary-General (A/47/419/Add.1) entitled "Comprehensive policy review of operational activities of the United Nations system" was also issued, under the General Assembly agenda item entitled "Operational activities for development".

32. Impact assessment is an important aspect of the pilot programme on endogenous capacity-building. According to the above-mentioned note by the Secretary-General (para. 35), which was based on the analysis of an external consultant of a comprehensive policy review of operational activities of the United Nations system, that programme constituted one of the few comprehensive evaluations carried out to assess the contributions made by United Nations organizations to capacity-building for science and technology in developing countries.

33. The individual projects have already influenced science and technology policy-setting in the participating countries, and they have led to the starting of a participatory decision-making process, the sensitizing of political leaders and stakeholders in the development process and the critical review of macroeconomic as well as science and technology issues within the framework of each country's development goals and priorities. The process of building endogenous capacity has attracted high-level attention and created a wide impact on society's attitudes towards the role of science and technology in development. Significant progress has also been made towards developing the portfolio of national initiatives. The portfolio is expected to cover three critical areas: (a) measures required to overcome policy inconsistency and impediments to entrepreneurship and productivity, (b) the designing of science and technology infrastructure to contribute decisively to technology-sensitive development priorities and (c) the adding of value to selected national endowments and resources, by focusing on technologies appropriate to the country's specific requirements.

34. Important lessons have been learned with regard to the implementation of programmes of this nature. It is clear that because the projects relied on the guidance of the National Steering Committees and on the expertise of local consultants, achievement of specific goals and targets sometimes took much longer than had been anticipated. Yet this is part of the essential learning

process and should be viewed in terms of its long-term effect. In addition, the development aspect of the projects cannot be overemphasized, especially as in some cases they are still viewed as projects for science and technology per se.

35. The note by the Secretary-General on the comprehensive policy review of operational activities of the United Nations system discussed the methodology of extensive in-country consultations used in the pilot projects in terms of its serving as a means of assisting developing country Governments and the relevant United Nations organizations to reach a consensus on the specific actions needed for endogenous capacity-building in the country concerned. The note suggested (para. 54 (b)) that with some tightening of the methodology used in the initial assessment, which was carried out by each country itself, such an approach seemed to be practical and could be expanded to include the participation of bilateral donors.

36. Once the impact studies, project evaluations and inter-agency missions have been completed in all countries, it should be possible to arrive at a more definitive view, though still on a limited basis, on how far and how much the United Nations system has contributed to endogenous capacity-building in developing countries.

IV. CONCLUSION AND RECOMMENDATIONS

37. The concept and the operational process of endogenous capacity-building are complex and steady efforts are required to understand and sustain both concept and process. The only way a country can learn, however, is through its own learning process. In this sense, the pilot projects on endogenous capacity-building provide the means whereby the country learns to rely on itself and acquires endogenous capacity through a participatory process.

38. The above-mentioned note by the Secretary-General suggested (para. 45) that evaluation was greatly facilitated when, during project design, a series of indicators of success were selected and the best means of quantifying those indicators put in place. It acknowledged that there had been little success to date in the process of developing quantitative indicators of the impact of science and technology on development, mentioned that an extensive discussion of the issue was to be found in a report submitted to the former Advisory Committee on Science and Technology for Development, and proposed that a further review of the status of "impact indicators" would be useful.

39. Based on the findings of the three inter-agency missions conducted so far, the following conclusions can be drawn on the impact of United Nations system activities on endogenous capacity-building:

(a) Although modest in comparison with bilateral aid, technical assistance of the United Nations system in science and technology for development has contributed significantly to overall scientific and technological development;

(b) The concept of endogenous capacity-building in science and technology, though of recent origin, has generated wide consensual support. Existing activities of the United Nations system were not designed to directly achieve

the objective of endogenous capacity and hence are not readily susceptible to an assessment from such a perspective;

(c) A high-level policy decision should be taken in the United Nations to use endogenous capacity-building as one of the major guidelines and yardsticks in the development process; all long-term projects should use endogenous capacity as one of their major objectives, and it should be fully integrated into the project cycle; and decision makers in Member States should be sufficiently sensitized to this concept;

(d) Cross-sectoral projects involving technology input, to the extent possible, should be executed by national organizations, this being an important means of building endogenous capacity in science and technology for development;

(e) There should be prior agreement that projects on endogenous capacity-building, upon conclusion, will be incorporated into national plans and programmes, and effective follow-up measures identified and put in plan before completion;

(f) Greater attention should be bestowed in future on the quality of experts, the timely supply of equipment and services, the training of local personnel, and the adequate modernization and maintenance of equipment;

(g) Bilateral and multilateral donors should harmonize their efforts in science and technology at the country level so as to facilitate greater optimization of collective resources and programmatic complementarity. This should also be coordinated with domestic resources.

40. In its consideration of the present report and of the subject under discussion, the Commission may also wish to refer to the above-mentioned note by the Secretary-General (A/47/419/Add.1), particularly paragraphs 25-54 which address many of the same issues.

Notes

1/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (A/CONF.151/26/Rev.1) (United Nations publication, Sales No. E.93.I.8 (Vol. I)), resolution I, annex II.

2/ See Official Records of the General Assembly, Forty-sixth Session, Supplement No. 37 (A/46/37), chap. II.

3/ See Report of the United Nations Conference on Science and Technology for Development, Vienna (20-31 August 1979) (A/CONF.81/16 and Corr.1 and 2) (United Nations publication, Sales No. E.79.I.21).

4/ Organisation for Economic Cooperation and Development (OECD), Managing Technological Change in Less Developed Countries (Paris, OECD, 1991).

Notes (continued)

5/ See Report of the United Nations Conference on Science and Technology for Development, Vienna (20-31 August 1979) (A/CONF.81/16 and Corr.1 and 2) (United Nations publication, Sales No. E.79.I.21), chap. VII.

6/ See Official Records of the General Assembly, Forty-fourth Session, Supplement No. 37 (A/44/37), chap. II.